dual effect — it not only helps the axon to overcome the inhibitory effects of myelin, but also increases its intrinsic capacity for growth.

So, the conditioning effect of a peripheral lesion can be reproduced by stimulating cAMP signalling in the DRG. The fact that this intervention can be carried out at the level of the cell body means that it is not necessary to inflict further trauma on the site of injury, raising the possibility that it could lead to a viable clinical treatment for spinal cord damage. At a more fundamental level, it will also be interesting to elucidate the molecular basis of the asymmetrical response of DRG neuronal processes to injury.

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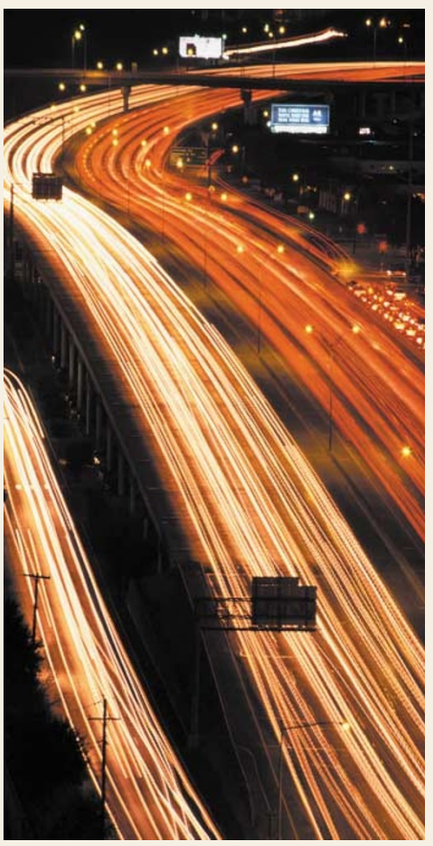

VISUAL ATTENTION

Now you see it…

It's surprising just how little we actually see when we aren't paying attention. Despite the subjective impression that we are taking in the entire visual field, most studies find that we remain unaware of most of the details of areas of space on which we are not focusing. It is generally thought that only 'primitive' visual features — colour or orientation, for example — can be picked out pre-attentively, because these features are processed very early in the visual system. But two new studies cast doubt on this assumption.

Both of the studies used natural scenes, rather than artificial psychophysical stimuli, to test visual processing. Li *et al.* asked subjects to attend to a task, presented in the centre of the visual field, in which they had to discriminate between T and L shapes. At the same time, they were asked to detect whether a scene presented in the periphery of the visual field contained an animal.

Conventional wisdom would predict that this second task would be very difficult to do when attentional resources were being used up by the central letter discrimination. But performance on the animal detection part of the task was just as good when it was presented along with the letter task as when it was done on its own, suggesting that subjects can detect and categorize the complex sets of visual features that make up an animal even when they don't devote their attention to it.

The other study, carried out by Rousselet *et al.*, also required subjects to detect whether an animal was present in a scene. This time, however, the researchers presented subjects with either one or two pictures, one on each side of the visual field, while the subjects fixed their vision on a central point. Subjects could correctly detect whether an animal was present just as quickly for two pictures as they could for one. This indicates that the images were categorized rapidly and in parallel, a claim that was confirmed by simultaneously recording electrical activity of the brain.

Both of these studies raise many questions about visual processing. For example, it is unclear whether the pictures in the second study were processed separately by the two hemispheres of the brain. Would the results have been the same if the two pictures had been presented above and below the fixation point, instead of to the left and right? And do we process complex features of unattended visual scenes in the same way even if we aren't trying to detect a specific type of stimulus (in this case, an animal)? Nonetheless, it is clear that the gating of visual information by attention is much less simple than we thought, and that 'early' processing can include processes that occur at high levels of the visual system.

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